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**WHAT IS CLAIMED IS:**

1. An apparatus comprising:  
an antenna;  
an AlGaN amplifier connected to the antenna;  
5 a transmit path, connected to the amplifier, which provides a signal for amplification to the amplifier; and  
a receive path, connected to the amplifier, which receives an amplified signal from the amplifier.
2. The apparatus of claim 1, comprising:  
10 a switch with an output connected to the amplifier, a first input connected to the receive path and a second input connected to the transmit path.
3. The apparatus of claim 2, comprising:  
a second switch, wherein the second switch has a first switch position connecting a signal for transmission to the antenna, and a second switch position  
15 connecting the receive path to the antenna.
4. The apparatus of claim 3, comprising:  
a switch controller which controls the first and second switches to selectively connect the antenna to the amplifier for amplification of a received signal and the amplifier to the antenna for amplification of a signal for  
20 transmission.

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5. The apparatus of claim 1, wherein the AlGa<sub>N</sub> amplifier comprises three AlGa<sub>N</sub> amplifiers.

6. The apparatus of claim 5, wherein the AlGa<sub>N</sub> amplifiers are wide band gap high electron mobility transistors.

5 7. The apparatus of claim 5, wherein the AlGa<sub>N</sub> amplifiers are monolithic microwave integrated circuits.

8. A method for transmission and reception of signals comprising:  
setting a first switch to a first position, the first position connects a  
signal for transmission to an amplifier;  
10 setting a second switch to a first position, the first position connects the amplified signal for transmission to an antenna;  
setting the second switch, after a predetermined amount of time, to a  
second position, the second position connects a signal received from the antenna to  
a receive path; and  
15 setting the first switch, after the predetermined amount of time, to a  
second position, the second position connecting the receive path to the amplifier.

9. The method of claim 8, wherein when the second switch is in the second position the amplified signal from the receive path is connected to receiver circuitry.